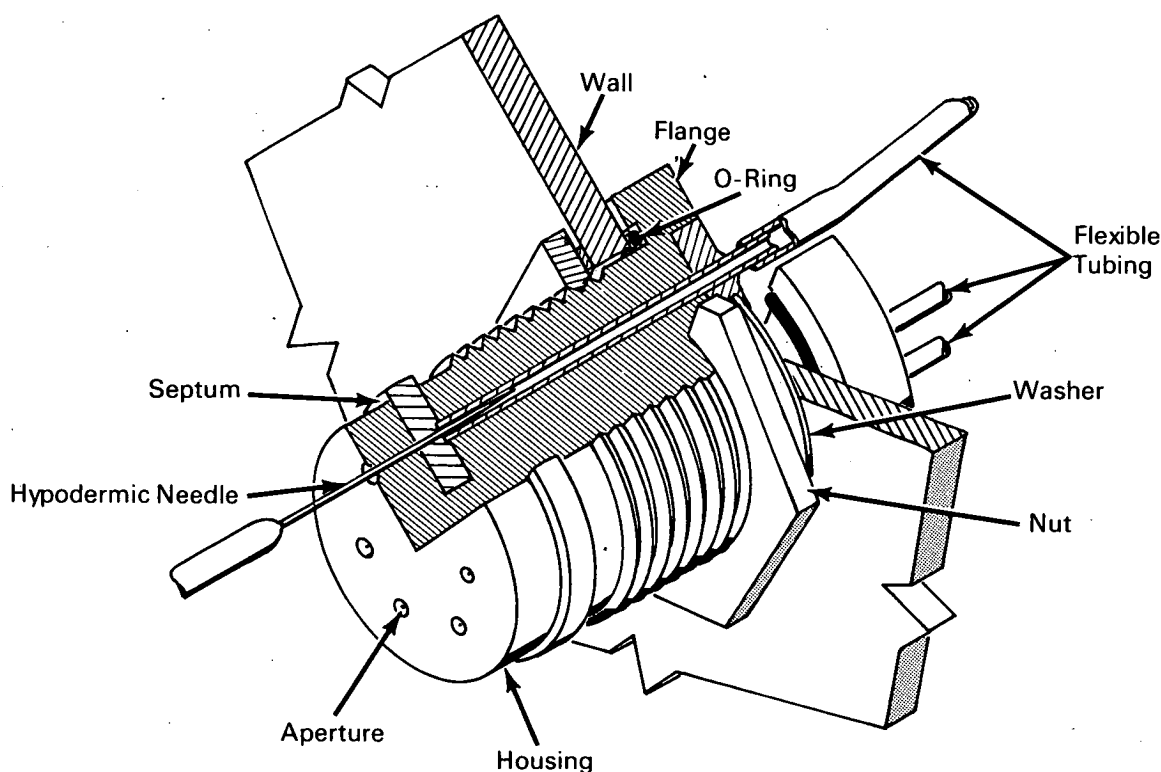


# NASA TECH BRIEF



NASA Tech Briefs are issued to summarize specific innovations derived from the U.S. space program, to encourage their commercial application. Copies are available to the public at 15 cents each from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151.

## Self-Sealing Closure Enables Access to Several Fluid Containers



### The problem:

To devise a compact self-sealing closure assembly that will enable small amounts of specific biochemical solutions to be withdrawn from or added to any of several containers arranged in a relatively inaccessible or small space.

### The solution:

A closure assembly incorporating a self-sealing septum of a silicone elastomer through which a hypodermic needle can be inserted in line with any one

of several small-diameter tubes connected to the individual containers.

### How it's done:

The closure assembly is inserted through a wall opening in a compartment and secured in a fluid-tight position by means of the nut, washer, and O-ring. Several tubes (one tube for each container in the group) are positioned in the closure assembly housing. These tubes extend just beyond an undercut groove in which the septum is seated. Apertures of

(continued overleaf)

different diameters (as an aid in identifying the biochemical containers) are drilled into the base of the housing concentrically with the respective tubes. The tube ends extending from the housing are individually connected by flexible plastic tubing to the associated containers. When the hypodermic needle is withdrawn, following addition or removal of liquid, the septum seals itself.

**Notes:**

1. The septum assembly can be used for long periods to dispense small quantities of biochemical solutions under sterile conditions or other liquids which must be protected from the atmosphere. It may have possible application in surgical procedures involving the artificial kidney and blood bypass techniques.

2. Inquiries concerning this invention may be directed to:

Technology Utilization Officer  
NASA Pasadena Office  
4800 Oak Grove Drive  
Pasadena, California 91103  
Reference: B67-10207

**Patent status:**

Inquiries about obtaining rights for the commercial use of this invention may be made to NASA, Code GP, Washington, D.C. 20546.

Source: Sam B. Wheeler  
Jet Propulsion Laboratory  
(NPO-10123)